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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,715	03/27/2001	Kwok Pun Lee	US010071	1324

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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
HUYNH, THU V	
ART UNIT	**PAPER NUMBER**
2178	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/818,715	LEE ET AL.	
	Examiner	Art Unit	
	Thu V Huynh	2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: RCE filed on 04/11/2005 and Declaration filed on 03/10/2005 to application filed on 03/27/2001.

2. Claims 1-14 are pending in the case. Claims 1 and 8 are independent claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> (b) This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-6 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Maloney, US 2002/0122057, filed on 03/02/2001, and in view of Clunie, "DICOM SR Meets XML" and "SR Object Model (SR-OM)", pages 1-22, NEMA SR Workshop 03/29-30/2000, and Claussen et al., US 6,732,330, filed 09/1999.**

Regarding independent claim 1, Maloney teaches the steps of:

- mapping each DICOM attribute of a plurality of DICOM attributes in the DICOM document into a corresponding XML element of a plurality of XML elements (Maloney, figures 1A-1C; page 2, paragraph 33; In figure 1A, server provides DICOM documents to user at Clinical display, wherein the DICOM data is stored in

Information Storage. In figure 1C, building patient description XML document from DICOM data source. This inherently discloses that the DICOM attributes in the Information Storage of the DICOM document must be map into a corresponding XML elements in order to create an XML document to provide to user); and

- outputting each XML element of the plurality of XML elements to the XML document in a format (Maloney, figures 1C; page 2, paragraphs 33-35).

Maloney teaches "XML provides mechanism (e.g., CSS, XSLT, XSL) to render information for display" (Maloney, page 4, paragraph 45). However, Maloney does not explicitly disclose the DICOM-SR document and the format conforms to an XML document-type-definition of the XML document.

Clunie teaches mapping each DICOM attribute of a plurality of DICOM-SR attributes in the DICOM document into a corresponding XML element of a plurality of XML elements (Clunie, pages 4-5, converting DICOM to XML wherein DICOM attributes are mapped to element of XML); and XML includes DTD and Style sheets XSL (Clunie, pages 2 and 9).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Clunie and Maloney, since this would have allowed a DICOM-SR document among other DICOM types converted to XML.

Claussen teaches outputting each XML element of the plurality of XML elements to the XML document in a format that conforms to an XML document-type-definition of the XML document (Claussen, col.1, lines 30-41 and col.2, lines 1-5; eXentsible Stylesheet Language (XSL) templates used to formatting and manipulating XML of any custom DTD).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Claussen into Maloney and Clunie to provide a format that conforms to an XML document-type-definition (DTD) of the XML, since XSL/XSLT used to format XML according with a DTD associated with it (Claussen, col.1, lines 30-42), as well as "to render information for display" (Maloney disclosed in page 4, paragraph 45). It is noted that XSL used to transform/format one XML document to another XML document that conform to a different DTD was standard and well known in the art at the time the invention was made.

Regarding dependent claim 2, which is dependent on claim 1, Maloney, Clunie and Claussen teach the limitations of claim 1 as explained above. Refer to the rationale relied to reject claim 1, the limitations of "wherein outputting each XML element includes formatting the XML element via one or more XSLT templates to conform to the XML document-type-definition" is addressed. The rationale is incorporated herein.

Regarding dependent claim 3, which is dependent on claim 2, Maloney, Clunie and Claussen teach the limitations of claim 2 as explained above. Refer to the rationale relied to reject claim 2, the limitation of "wherein the formatting of the XML element is via an XSLT engine" must be included. The rationale is incorporated herein.

Regarding dependent claim 4, which is dependent on claim 2, Maloney, Clunie and Claussen teach the limitations of claim 2 as explained above. Maloney does not explicitly teach

wherein the one or more XSLT templates correspond to one or more DICOM Information Entities.

Clunie teaches parsing plurality of DICOM attributes from a DICOM data file in order to convert the DICOM data file to an XML data file, wherein the XML data file is rendered including DICOM Information Entities (Clunie, pages 11-13, Patient information).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Clunie and Maloney to have XSLT templates correspond to one or more DICOM Information Entities, since Maloney's system using XSLT templates to format the XML data file, such template must be correspond to one or more DICOM Information Entities in order to render such XML including such Information Entities.

Regarding dependent claim 5, which is dependent on claim 1, Maloney, Clunie and Claussen teach the limitations of claim 1 as explained above. Refer to the rationale relied to reject claim 1, Maloney teaches the mapping step is processed and out put the XML document to the user in a format without using DTD as explained above. Therefore limitation of "wherein the mapping of each DICOM attribute into a corresponding XML element is independent of the XML document-type-definition of the XML document" is included. The rationale is incorporated herein.

Regarding dependent claim 6, which is dependent on claim 1, Maloney, Clunie and Claussen teach the limitations of claim 1 as explained above. Clunie teaches

- parsing each DICOM attribute to segregate a DICOM data type, and a DICOM codeID from the DICOM attribute (Clunie, pages 4-5 and 11-13; parser used to parse a DICOM document, which includes DICOM attributes, such as data type "(0x0040,0xa040)<PNAME>" and codeID "(0x0008,0x0100)<000555>" in order to convert the DICOM into XML), and wherein the mapping includes:
- assigning the DICOM codeID to an attribute of the corresponding XML element (Clunie, page 8, teaches "XML Alternatives" wherein <contentlable> and <relationshiptype> elements insides <contentitem> element are attributes of <contentitem> element that have attributes' values are "1.1" and "HAS OBS CONTEXT". Pages 4-5 for mapping DICOM attribute to XML element. Applying this to page 5, lines 6-10, the <codevalue> element is an attribute of <codesequence> element that has value is "000555"); and
- mapping the DICOM data type to a corresponding value type of the corresponding XML element (Clunie, pages 4-5; mapping "Value Type <PNAME>" to "<valuetype>PNAME</valuetype>"); and
- assigning the corresponding value type to an attribute of the corresponding XML element (Clunie, page 8, teaches "XML Alternatives" wherein <contentlable> and <relationshiptype> elements insides <contentitem> element are attributes of <contentitem> element that have attributes' values are "1.1" and "HAS OBS CONTEXT". Pages 4-5 for mapping DICOM attribute to XML element. Applying this to page 5, lines 1 and 12, the <valuetype> element is an attribute of <contentiem> element that has value is "PNAME").

Clunie does not explicitly disclose first and second attributes. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to assign DICOM codeID and value type to first and second attributes of the corresponding XML.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Clunie and Maloney to provide such parsing and mapping steps, since this would have allowed an thoroughly method to convert an DICOM to XML.

Regarding dependent claim 7, which is dependent on claim 6, Maloney and Clunie teach the limitations of claim 6 as explained above. Refer to the rationale relied to reject claim 7. Clunie teaches parsing the DICOM attributes of DICOM SR and mapping such attributes into attribute of the corresponding XML elements as explained above.

It would have been obvious to a person ordinary skill in the art at the time the invention was made to have includes parsing and mapping steps for a DICOM attribute value, since this would have allowed converting DICOM with any attributes into XML. As discussed in claim 6 above, Clunie does not explicitly disclose third attribute. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to assign DICOM attribute value to a third attribute of the corresponding XML, since it is standard and well known that element's attributes are treated the same if the attributes' order in the element change.

5. **Claim 8 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Clunie, "DICOM SR Meets XML" and "SR Object Model (SR-OM)", pages 1-22, NEMA SR Workshop 03/29-30/2000.**

Regarding independent claim 8, Clunie teaches the steps of:

- a DICOM parser that is configured to provide a plurality of DICOM attributes from a DICOM data file (Clunie, pages 11-13; parser used to parse a DICOM document in order to convert the DICOM document to XML document); and
- an XML formatter that is configured to provide a plurality of XML elements corresponding to the plurality of DICOM attributes (Clunie, pages 11-13; transcoding into XML document).

Clunie does not explicitly dislose XML formatter, operably coupled to the DICOM parser. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have included the XML formatter coupled to the DICOM parser in a system, since the DICOM parser and XML formatter is connect together in the process.

6. **Claims 9-11 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Clunie as applied to claim 8 above and further in view of Claussen et al., US 6,732,330, filed 09/1999.**

Regarding dependent claim 9, which is dependent on claim 8, Clunie teaches the limitations of claim 8 as explained above. Clunie does not explicitly disclose wherein the XML formatter is configured to provide the plurality of XML elements in a format that conforms to an XML document-type-definition of an XML document comprising the plurality of XML elements.

Claussen teaches outputting each XML element of the plurality of XML elements to the XML document in a format that conforms to an XML document-type-definition of the XML

document (Claussen, col.1, lines 30-41 and col.2, lines 1-5; eXentsible Stylesheet Language (XSL) templates used to formatting and manipulating XML of any custom DTD).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Claussen and Clunie to provide a format that conforms to an XML document-type-definition (DTD) of the XML, since XSL/XSLT used to format XML according with a DTD associated with it (Claussen, col.1, lines 30-42), as well as "to render information for display" (Maloney disclosed in page 4, paragraph 45). It is noted that XSL used to transform/format one XML document to another XML document that conform to a different DTD was standard and well known in the art at the time the invention was made.

Regarding dependent claim 10, which is dependent on claim 9, Clunie and Claussen teach the limitations of claim 9 as explained above. Refer to the rationale relied to reject claim 9, the limitation "wherein the XML formatter includes an XSLT engine that is configured to provide the plurality of XML elements based on one or more XSLT stylesheet templates that conform to the XML document-type-definition" is included. The rationale is incorporated herein.

Regarding dependent claim 11, which is dependent on claim 10, Clunie and Claussen teach the limitations of claim 10 as explained above. Clunie does not explicitly disclose wherein the one or more XSLT stylesheet templates correspond to one or more DICOM Information Entities. However, Clunie teaches parsing plurality of DICOM attributes from a DICOM data

file in order to convert the DICOM data file to an XML data file, wherein the XML data file is rendered including DICOM Information Entities (Clunie, pages 11-13, Patient information).

Claussen teaches XSL/XSLT template used to formating an XML document in a format that conform to an author defined DTD (Claussen, col.1, lines 30-41 and col.2, lines 1-5.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Claussen and Clunie to use XSL/XSLT template correspond to DICOM Information Entities, since this would have allowed rendering the XML including DICOM Information Entities.

7. **Claims 12-14 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Clunie in view of Claussen as applied to claim 9 above and further in view of Maloney, US 2002/0122057, filed on 03/02/2001.**

Regarding dependent claim 12, which is dependent on claim 9, Clunie and Claussen teach the limitations of claim 9 as explained above. Clunie does not explicitly disclose an XML builder, operably coupled between the DICOM parser and the XML formatter, that is configured to effect a direct mapping of each DICOM attribute of the plurality of DICOM attributes into a corresponding XML element of the plurality of XML elements independent of the XML document-type-definition.

Maloney teaches XML builder maps each DICOM attribute of a plurality of DICOM attributes in the DICOM document into a corresponding XML element of a plurality of XML elements and outputting each XML element of the plurality of XML elements to the XML document in a format without using DTD (Maloney, figures 1A-1C; page 2, paragraph 33-35).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combine Maloney into Clunie and Claussen to include an XML builder coupled between Clunie and Claussen's DICOM parser and the XML formatter to map DICOM attributes to XML elements before transforming/formatting to a specific XML using XSL, since this would allow the XML elements to transforming or formatting into any custom XML using XSL/XSLT that is conformed to any author defined DTD.

Regarding dependent claim 13, which is dependent on claim 12, Clunie Claussen and Maloney teach the limitations of claim 12 as explained above. Clunie specifically teaches:

- parsing each DICOM attribute to segregate a DICOM data type, and a DICOM codeID from the DICOM attribute (Clunie, pages 4-5 and 11-13; parser used to parse a DICOM document, which includes DICOM attributes, such as data type "(0x0040,0xa040)<PNAME>" and codeID "(0x0008,0x0100)<000555>" in order to convert the DICOM into XML), and wherein the mapping includes:
- assigning the DICOM codeID to an attribute of the corresponding XML element (Clunie, page 8, teaches "XML Alternatives" wherein <contentlable> and <relationshiptype> elements insides <contentitem> element are attributes of <contentitem> element that have attributes' values are "1.1" and "HAS OBS CONTEXT". Pages 4-5 for mapping DICOM attribute to XML element. Applying this to page 5, lines 6-10, the <codevalue> element is an attribute of <codesequence> element that has value is "000555"); and

- mapping the DICOM data type to a corresponding value type of the corresponding XML element (Clunie, pages 4-5; mapping "Value Type <PNAME>" to "<valuetype>PNAME</valuetype>"); and
- assigning the corresponding value type to an attribute of the corresponding XML element (Clunie, page 8, teaches "XML Alternatives" wherein <contentlable> and <relationshiptype> elements insides <contentitem> element are attributes of <contentitem> element that have attributes' values are "1.1" and "HAS OBS CONTEXT". Pages 4-5 for mapping DICOM attribute to XML element. Applying this to page 5, lines 1 and 12, the <valuetype> element is an attribute of <contentiem> element that has value is "PNAME").

Clunie does not explicitly disclose first and second attributes. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to assign DICOM codeID and value type to first and second attributes of the corresponding XML

Regarding dependent claim 14, which is dependent on claim 13, Clunie, Claussen and Maloney teach the limitations of claim 13 as explained above. Refer to the rationale relied to reject claim 14. Clunie teaches parsing the DICOM attributes of DICOM SR and mapping such attributes into attribute of the corresponding XML elements as explained above.

It would have been obvious to a person ordinary skill in the art at the time the invention was made to have includes parsing and mapping steps for a DICOM attribute value, since this would have allowed converting DICOM with any attributes into XML. As discussed in claim 7 above, Clunie does not explicitly disclose third attribute. However, it would have been obvious

to a person of ordinary skill in the art at the time the invention was made to assign DICOM attribute value to a third attribute of the corresponding XML.

Response to Amendment

8. The affidavit filed on 03/10/2005 under 37 CFR 1.131 has been considered but is ineffective to overcome the Maloney reference (2002/0122057).

The declaration filed on 03/10/2005 and exhibit B show the conception of the invention and show how the evidence supports the conception of the claimed invention.

However, the declaration filed on 03/10/2005 fails to provide the signature of all inventors of the application or show that one of the joint inventor is the sole inventor (MPEP, 715.04,"one of two joint inventors is accepted where it is shown that one of the joint inventors is the sole inventor of the claim or claims under rejection"). Although declaration consludes that "Exihibit B clearly describes the results of an actual translator that was built to valiadate the DICOM to XML conversion" by pointing to Exihibit B, "we have implemented a translator, called DICOM2XML, which take a structured report in DICOM binary format and produces an XML document" (Declaration, paragraph 6), this is not an affirmative statement that proof that the invention was actually worked for its intented purpose (MPEP, 2138.05, "For an actual reduction to practice, the invention must have been sufficiently tested to demonstrate that it will work for its intended purpose" King Instrument Corp. v. Otari Corp., 767 F.2d 853, 860, 226 USPQ 402, 407 (Fed. Cir. 1985)). Although the exihibit provides "Test Results" in Exihibit B, which includes the statement that "several test files generated from the SR XML2DICOM engine [6] are used" and "the test result demonstrated that the output from the DICOM2XML engine

completely matchs the orginal input to the SR XML2DICOM engine" as a proof of reduction to practice, it fails to show the input files and output files that were converted by the invention ever existed. There is no evidence to show such "output" and "input" files of the test results ever existed. A written description of test results can not qualify as reduction to practice.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu V Huynh whose telephone number is (571) 272-4126. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen S Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVH
January 14, 2005

STEPHEN HONG
SUPERVISORY PATENT EXAMINER